

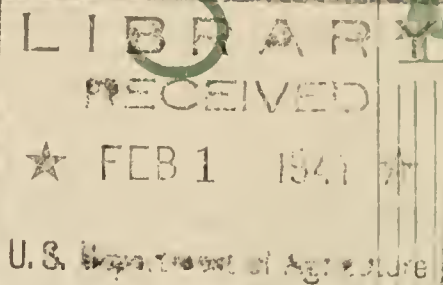
## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



# TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION  
UNIVERSITY FARM ST. PAUL, MINNESOTA



## Effect of Temperature on Germination

In conducting routine germination tests in the laboratory, all seeds are **usually** germinated under the same temperature conditions, although the conditions may vary from one testing laboratory to another. The temperature adopted by the Lake States Forest Experiment Station as standard is a range from 68° F. at night to 86° F. during the daytime. This approximates summer temperatures in this region.

However, in spite of long after-ripening treatments, some species failed to germinate under these conditions. Cutting tests of the ungerminated seed have showed it to be sound.

For many of these species it is believed the temperature of the germination room may be the limiting factor. In order to test this, a separate germination room was constructed with a temperature range from 50° to 77° F. This simulates the long period during the spring which is characterized by relatively cool nights and warm days. In addition, germination was attempted at two different constant temperatures--41° F. and 50° F.

Conclusive tests thus far have been completed on two species under these four temperature conditions. The results are shown in the following table:

<u>Species</u>	<u>Temperatures</u>			
	<u>41° F.</u>	<u>50° F.</u>	<u>50-77° F.</u>	<u>68-86° F.</u>
	Germination percent			
Boxelder (Acer negundo)	6.0	7.0	66.8	12.2
Wild plum (Prunus americana)	---	86.0	26.0	13.0

From tests on these two species it is quite apparent that temperature is an important factor in the germination process and that the optimum temperature for germination may be expected to vary markedly from one species to another.

Tests of other species which are normally difficult to germinate are now being conducted.

No. 177

January 1941

Assistance in the preparation of this material was furnished by the personnel of Work Projects Administration, O.P. 165-1-71-124, Sponsor, University of Minnesota, and O.P. 101-2-71-28, Sponsor, Lake States Forest Experiment Station.

